



BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Applied Science Pearson BTEC International Level 3 Foundation Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Biomedical Science Pearson BTEC International Level 3 Extended Diploma in Applied Science Pearson BTEC International Level 3 Extended Diploma in Biomedical Science
Unit number and title	Unit 22: Medical Physics Applications
Learning aims	C: Understand health and safety, associated risks, side effects and limitations of ionising and non-ionising instrumentation techniques in medical applications
Assignment title	Health and Safety in the medical use of ionising and non-ionising radiation technologies
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	In order to support your application to study Diagnostic Radiography and Imaging at University, you have secured a placement within the Radiography Department of a teaching hospital. Your clinical placement will allow you to shadow the work of a qualified Radiographer and gain valuable experience in the safe use of ionising and non-ionising radiation technologies. On completion of your placement, you will produce a report to demonstrate your understanding of these important topics.
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	Despite the many benefits of radiation technologies, the use of ionising and non-ionising radiation in medical applications is not without risk. Produce a report that discusses, compares and explains the health and safety issues, side effects and limitations of ionising and non-ionising radiation technologies in medical applications. • Discuss and justify why prevention and safety measures are put into place to protect patients and health care workers. Discuss the potential consequences of failing to follow and
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Task	comply with Health and Safety guidance and regulations. Include specific, scientific reasons why the precautions and measures are taken in clinical radiology to protect patients and operators. • Compare and explain the health and safety risks involved in the use of ionising and non-ionising radiation technologies and the impact these risks may have on patients and operators. Differentiate and order the level of risk according to the type of radiation technology used. Include detail of the potential side effects that may occur, and the limitations across a range of ionising and non-ionising radiation technologies. • Explain the role of the Health and Safety Executive and relevant legislation (e.g. A guide to the Control of Electromagnetic Fields at Work Regulations 2016) in the control of radiation exposure of medical staff and patients. • Explain the health and safety measures used by hospitals in order to maximise the protection of medical staff and patients with reference to current health and safety legislation and the Health and Safety Executive.
Checklist of evidence required	A report that includes: • A discussion of the precautions and measures that are taken to protect people exposed to ionising and non-ionising radiation in a medical setting including the potential consequences of failing to implement safeguarding procedures. • A comparison of the health and safety risks, side effects and limitations of ionising and non-ionising radiation technologies in a medical setting. • An explanation of the health and safety risks, side effects and limitations of ionising and non-ionising radiation technologies. • An explanation showing how hospitals use health and safety measures, legislation and HSE guidance to protect those exposed to ionising and non-ionising radiation in a medical setting.
Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
C. D2	Discuss the consequences of poor health and safety when using non-ionising and ionising radiation technologies and the prevention and safety measures employed.
C. M3	Compare the health and safety risks, side effects and limitations of non-ionising and ionising radiation technologies in medical applications to maximise the protection of operators and patients.
C. P5	Explain the health and safety risks, side effects and limitations of non-ionising and ionising radiation technologies.
C. P6	Explain how hospitals can employ health and safety measures, when using instrumentation, for the protection of operators and patients.

Sources of information to	http://www.hse.gov.uk/radiation/
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support you with this Assignment	https://www.gov.uk/government/collections/medical-radiation-uses-dose-measurements-and-safety-advice http://www.cancer.net/navigating-cancer-care/how-cancer-treated/radiation-therapy/side-effects-radiation-therapy http://www.hsa.ie/eng/Your_Industry/Healthcare_Sector/Occupational_Hazards_in_Hospital_Departments/Department_Hazards/Radiology/ http://www.radiologyinfo.org/en/info.cfm?pg=safety-xray http://www.hse.gov.uk/pubns/priced/hsg281.pdf
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